KARVETSKIY, A.V.; SIGEL', M.G.; KULICHKIN, A.V.; DEMIN, A.M.; RYZHOVA,
V.K.; FEDER, R.M.; MAKAROVA, T.L.; MEYER, R.A.; STEPANOVA, V.P.;
SKURATOV, A.D., red.; KHAUSTOVA, A.K., tekhn. red.

[Economy of Ul'ianovsk Province; statistical collection] Narodnoe
khoziaistvo Ul'ianovskoi oblasti; statisticheskii sbornik. Ul'ia-
novsk, 1961. 271 p.   (MIRA 15:5)

1. Ulyanovsk (Province) Statisticheskoye upravleniye. 2. Nachal'nik
Statisticheskogo Upravleniya Ul'yanovskoy oblasti (for Skuratov).
(Ul'ianovsk Province—Statistics)

KULICHKIN, P.N., vetvrach

Albargin therapy for coccidiosis in chicks. Ptitsevodstvo 8
no.6:32-33 Je '58.   (MIRA 11:6)

1.Gor'kovskaya oblastnaya vetbaklaboratoriya.
     (Poultry--Diseases and pests) (Coccidiosis) (Albargin)

KULICHKIN, P.N., kand. veter. nauk

Thermoelectric apparatus for disinfecting poultry houses.
Veterinariia 42 no.11:112-113 N '65.

(MIRA 19:1)

1. Gor'kovskaya oblastnaya veterinarnaya laboratoriya.

KULICHKIN, P.N., veterinarnyy vrach

Action of albargin in coccidiosis of chicks. Veterinariia 41
no.8:47-48 Ag '64.
(MIRA 18:4)

1. Gor'kovskaya oblastnaya veterinarnaya laboratoriya.

5.2100

77293
SOV/63-4-6-27/37

AUTHORS: Samsonov, G. V., Obolonchik, V. A., Kulichkina, G. N.

TITLE: Brief Communications. The Fusion Diagram of $KBF_4 \cdot KCl$ System

PERIODICAL: Khimicheskaya nuaka i promyshlennost', 1959, Vol 4, Nr 6, pp 804-805 (USSR)

ABSTRACT: The method of obtaining boron by electrolysis of melts has been least investigated, but it might have industrial value if sufficiently developed technologically. For the electrolysis, a bath containing B_2O_3, MgO, and MgF_2 was used, and 92% pure boron was obtained at 110°. In the present work, the fusion curve of system KBF_4-KCl was investigated. Starting materials were KCl, and KBF_4 obtained from borofluoric acid. The thermal analysis was carried out with a Kurnakov pyrometer. Melting was done in platinum

Card 1/3

Brief Communications. The Fusion Diagram   77293
of $KBF_4 \cdot KCl$ System   SOV/63-4-6-27/37

crucibles. From the results of thermal and chemical
analyses (determination of boric acid), a fusion
curve of the above system was prepared. A chemical
compound having the formula $KCl \cdot 11KBF_4$ (mp 590°)
was detected in the system. The above compound forms
a eutectic mixture with KBF_4, containing 97.8% of
KBF_4 (mp 508°). The second eutectic system (mp 471°)
contains 87.6% of KBF_4 and is formed from $KCl \cdot 11KBF_4$
and KCl. There is 1 figure; 1 table; and 7 references,
4 Soviet, 2 French, 1 U.S. The U.S. reference is:
U.S. Patent Nr 2572249, 1949.

ASSOCIATION: Institute of Cermets and Special Alloys, Academy of
                 Sciences, UkrSSR (Institut metallokeramiki i
                 spetsial'nykh splavov Akademii nauk USSR)

SUBMITTED: May 29, 1959

Card 2/3

Brief Communications. The Fusion Diagram   77293
of KBF$_4$KCl System   SOV/63-4-6-27/37

Card 3/3

82562

S/080/60/033/06/03/006

5. 1310

AUTHORS: Samsonov, G. V., Obolonchik, V. A., Kulichkina, G. N.

TITLE: The Problem of the Electrolytic Method of Obtaining Elemental Boron

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol. 33, No. 6, pp. 1365-1368

TEXT: The possibility of obtaining elemental boron by the process indicated in (Ref. 7) was again studied and some preliminary data were published. The electrolysis was carried out in a graphite crucible 56 mm in diameter and 95 mm high. A mixture was made of the powder-like initial salts with the ratio $KCl : KBF_4 = 5 : 1$ based on the weight. In the case of using a Cu electrode, only $0.3 \pm 0.4\%$ of Cu are found in the cathode product, whereas with iron and Mo electrodes this percentage is considerably higher. It was found that by the process described in (Ref.7) elemental boron with a purity of no more than 93% can be obtained. A repeated use of the graphite crycible reduces the carbon content in the cathode deposit considerably. The carbon content in boron, being in the first electrolysis 6.82% decreases to 0.55% after repeated electrolysis. An increase in the temperature of the process leads to a decrease of the cathode current yield. It is probable that the current yield obtained at 1-5 amp/dm^2 is close to the maximum which can be attained under the given

Card 1/2

82562

S/080/60/033/06/03/006

The Problem of the Electrolytic Method of Obtaining Elemental Boron

conditions. In the electrolysis of molten KBF_4 (without KCl) boron with a purity of 99% can be obtained, but with a very low boron yield. A. I. Kashtanov took part in the experimental part of the work. There are 2 graphs, 1 table, 1 diagram and 10 references: 2 Soviet, 3 French, 2 American, 2 English and 1 German.

ASSOCIATION: Institut metallokeramiki i spetssplavov AN UkrSSR (Institute of Metal Ceramics and Special Alloys of the AS UkrSSR)

SUBMITTED: July 30, 1959

Card 2/2

SHEVTSOVA, Z.N.;KULICHKINA, G.N.; FEDOROVA, A.N.

Solubility isotherms of the systems: $PrCl_3$-KCl - H_4O and $PrCl_3$-
NH_4Cl - H_2O at 25 and 50°. Izv. vys. ucheb. zav.; khim. i khim.
tekh. 4 no. 2:178-179 '61.   (MIRA 14:5)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V.
   Lomonosova, Kafedra tekhnologii redkikh i rasseyannykh elementov.
            (Systems (Chemistry))   (Solubility)

KULICHKOV, A.

Build faster and cheaper. Fin.SSSR 19 no.8:70-71 Ag '58. (MIRA 11:9)

1. Starshiy inzhener Khabarovskoy krayevoy kontory Gosbanka.
      (Khabarovsk Territory--Construction--Industry)

DOVGALEVSKIY, Al'bert Abramovich; KULICHKOV, Anatoliy Grigor'yevich;
KORKHOV, Ya.G., red.

[Reducing the time needed for mastering new techniques;
experience acquired by enterprises of the Administration
of Ferrous and Nonferrous Metallurgy of the Leningrad
Economic Council] Sokrashchenie srokov osvoeniia novoi tekh-
niki; opyt predpriiatii Upravleniia chernoi i tsvetnoi metal-
lurgii Lensovnarkhoza. Leningrad, 1964. 20 p.
(MIRA 17:11)

BELYAYEV, D.K.; UTKIN, L.G.; KULICHKOV, B.A.

Effect of the light factor in the development of fur cover in
mink (Mustela vison Shr.). Izv. SO AN SSSR no.4 Ser. biol.-med.
nauk no.1:91-100 '64.
(MIRA 17:11)

1. Institut tsitologii i genetiki Sibirskogo otdeleniya AN SSSR,
Novosibirsk.

BARANOV, Yu.B.; BARANOVA, Ye.N.; BOBROVSKIY, V.I.; GRISHCHENKO, G.I.;
    GONCHAR, G.V.; DOLBISH, V.S.; KALINOVSKIY, V.S.; KARAKOTSKIY, Ye.D.,
    KULICHKOV, G.M.; KAGANOVSKAYA, S.M.; LESTEV, A.V.; METELKIN, L.I.;
    TIKHONRAVOV, V.M. [deceased]; DOLBISH, V.S., spetsred.;KUZ'MINA,
    V.S., red.; KISINA, Ye.I., tekhn.red.

[Fishing equipment used in Far Eastern waters] Orudiia rybolovstva
Dal'nevostochnogo Basseina. Moskva, Pishchepromizdat, 1958. 214 p.
                                            (MIRA 11:12)
   (Soviet Far East--Fishing--Equipment and supplies)

KULICHKOV, N.N., inzhener.

Laboratory freezing apparatus. Rats. i izobr. predl. v stroi no.66:
21-24 '53.   (MLRA 7:9)
     (Refrigeration and refrigerating machinery)
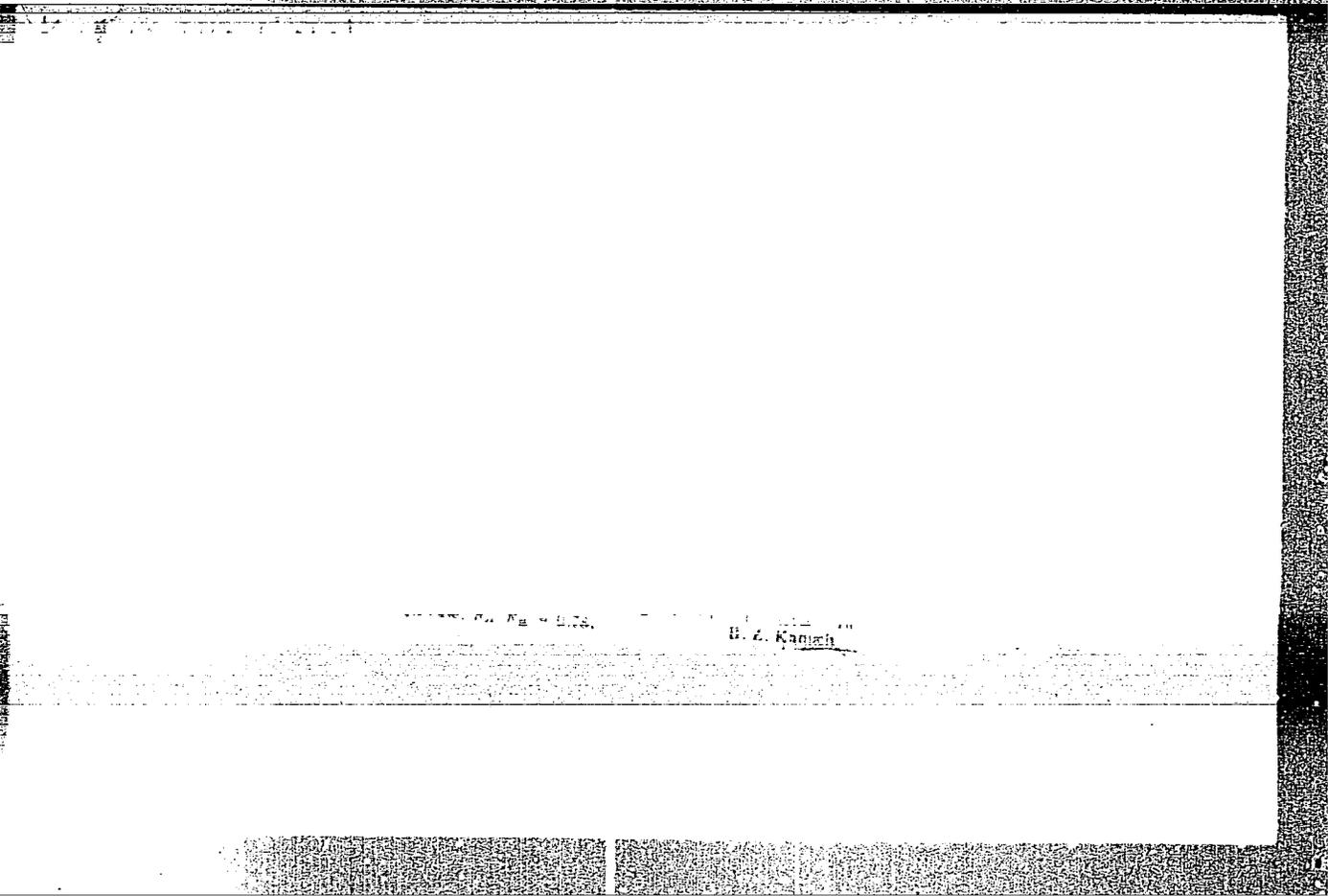
GOLUBEVA, T.K.; KALASHNIKOVA, A.Ya.; KULICHKOV, S.A.; TUMANSKIY, A.L.
[deceased]; YEGORENKOV, I.P., kand.tekhn.nauk, red.; SIROTIN,
A.I., red.izd-va; UVAROVA, A.F., tekhn.red.

[Foundry sands from commercial quarries of the U.S.S.R.; a hand-
book] Formovochnye peski promyshlennykh kar'erov SSSR; spra-
vochnik. Pod red. I.P.Egorenkova. Moskva, Gos.nauchno-tekhn.
izd-vo mashinostroit.lit-ry, 1960. 242 p.   (MIRA 13:9)
          (Sand, Foundry)

CHERNOSVITOV, Yu.L.; DZENS-LITOVSKIY, A.I.; IVANOV, V.A.;
KULICHKOV, S.A., nauchn. red.

[Industry's requirements as to the quality of mineral raw
materials; a handbook for geologists] Trebovaniia pro-
myshlennosti k kachestvu mineral'nogo syr'ia; spravochnik
dlia geologov. Moskva, Nedra. Nos.9, 77. 1965.

(MIRA 18:9)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut
mineral'nogo syr'ya.

KULICHKOVA, Z.N.

Microclimatic and radiation observations on the grounds of
Mechnikov Hospital. Trudy LSGMI no.68:100-110 '61.

(MIRA 15:11)

1. Kafedra kommunal'noy gigiyeny Leningradskogo sanitarno-
gigiyenicheskogo meditsinskogo instituta (zav. kafedroy - prof.
A.I.Shtreys).

(LENINGRAD--HOSPITALS--HYGIENE)

HRUBISKO, M.; HODZOVA, O.; MAYEROVA, A.; CICMANCOVA, L.; Technicka
spolupraca: KULICHOVA, E.

Beta-thalassemia in a Slovak family. Cas. lek. Cesk. 104 no.47:
1290-1296 26 N '65.

L 22736-66   EWT(1)   GW

ACC NR: AP6002858   SOURCE CODE: UR/0286/65/000/024/0008/0009

AUTHORS: Zel'tsman, P. A.; Raytburg, G. S.; Kulichuk, Yu. R.

ORG: none

TITLE: Mechanism for controlling the clamping levers of oil well devices. Class 5,
No. 176843 /announced by Special Construction Bureau of Geophysical Device Construc-
tion for Geology of the UkrSSR (Osoboye konstruktorskoye byuro geofizicheskogo
priborostroyeniya glavgeologii UkrSSR)

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 24, 1965, 8-9

TOPIC TAGS: well drilling machinery, lever, pressure gage

ABSTRACT: This Author Certificate presents a mechanism for controlling the clamping
levers of oil well devices, placed in a hermetically sealed chamber filled with
fluid and located inside the drill-hole device. To simplify its construction and
decrease the cost of the actuator, the latter is made as a hydraulic multiple action
system equipped with a liquid compensator which senses the drill-hole pressure and
transmits it through electromagnetically controlled distribution channels to the
working piston. The piston rod is attached to the lever system, while the chamber
is connected to an unfilled draining reservoir at a lower pressure than the drill-
hole pressure. This design assures the return action of the system (see Fig. 1).

Card 1/2   UDC: 550.839

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ACC NR: AP6002858

Fig. 1. 1 - Liquid compensator; 2 and
         3 - distribution channels; 4 and
         5 - electromagnetic controls;
         6 - piston; 7 - piston rod;
         8 - lever system; 9 - piston
      chamber; 10 - draining chamber.
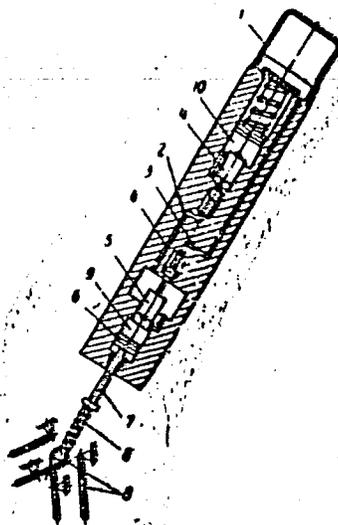
Orig. art. has: 1 figure.

SUB CODE: 13/ SUBM DATE: 26Mar64

Card 2/2

KULICKA, F.; MROVED, J.

Complications following endotracheal anesthesia. Cesk.
otolaryng. 13 no.2;93-99 Ap '64.

1. Otorinolaringologicka katedra lekarske fakulty PU
[Palackoho Universita] v Olomouci (vedouci prof. dr. J. Chvojka).

KULICKA, Rudolf

Economical design of fixtures for modern machining techniques.
Stroj vyr 11 no.3:131-135 Mr '63.

1. Zavodni pobocka Ceskoslovenske vedecko-technicke spolecnosti,
Zavody presneho strojirenstvi, n.p., Gottwaldov.

KULICKA, F.

The effect of selenium on the upper respiratory tract. Cesk.
otolaryng. 12 no.3:168-173 Je '63.

1. Otolaryngologicka klinika lek. fak. PU v Olomouci, prednosta
prof. dr. J. Chvojka.
             (SELENIUM)   (OCCUPATIONAL DISEASES)

KuLIcKA, Joanna

POLAND

GREGOROWICZ, Zbigniew, doc. dr; KULICKA, Joanna, mgr inz; KAMINSKI, Vladyslav, dr inz.

1. Department of Sanitary Chemistry (Katedra Chemii Sanitarnej)(for Gregorowicz and Kulicka); 2. Department of Organic Technology (Katedra Technologii Chemicznej Organicznej)(for Kaminski). Polytechnic, Silesia, Gliwice (Politechniki Slaskiej, Gliwice) - (for all).

"Thin-layer chromatographic analysis of some pyridine derivatives."

86727

26.2191

AUTHOR: Kulicki, Zbigniew, Master of Engineering

TITLE: The Basic Methods of Sizing Control Valves

TEXT: The purpose of the article is to present four methods for the selection of suitable control valves. The first is the contraction method: the valve is regarded as a contracted section of the pipe for measuring purposes and the following formula is applied to determine the rate of flow:

$$Q_{v_1} = 0.01252 \cdot \alpha_g \cdot \beta_1 \cdot \beta_2 \cdot \beta_3 \cdot \varepsilon \cdot m \cdot D^2 \cdot \sqrt{\frac{\Delta P'}{\varrho_1}} \, m^3/h \qquad (1)$$

where α_g is the flow in the concentrated section; β_1 - correction factor for α_g; β_2 - correction for rough surface inside the pipe; β_3 - correction for the loss in orifice; $m = (d/D)^2$ - the ratio between contraction and the following divergence; D - diameter of pipe before contraction; d - diameter of the contracted section; $\Delta P'$ - pressure drop in the contraction; ϱ_1 - density before the contraction (in kg/m^3). Of course, a valve and a measuring contraction are not identical due to the different shape of both devices, and some inaccuracies will

Card 1/3

86727

P/034/60/000/010/005/005
A225/A026

The Basic Methods of Sizing Control Valves

arise. The second method is that of applying the flow coefficient ψ. In this case the rate of flow is expressed by

$$Q_{v_1} = \psi \cdot m_x \cdot F \sqrt{\frac{P_1}{\varrho_1}} \quad m^3/s , \qquad (4)$$

heres P_1 is the pressure before the valve. The author then explains the meaning of the flow coefficient ψ, depending on the changing diameter of the bore, on changing velocity, pressure and direction. The third method is very popular in the USA. The author calls it "C_v Method". To calculate the intensity of the flow the following formula is used:

$$Q_{v1} = C_v \cdot \beta_1 \cdot \sqrt{\frac{\Delta p}{\varrho_1}} \quad m^3/h, \qquad (17)$$

here is: Δp - pressure drop in the control valve; C_v - passing coefficient of the valve depending on its aperture (the latter is always indicated in the manufacturers' catalogues). Finally, the last method is called " the resistance method", based on the formula for an incompressible fluid:

$$\frac{P_1 - P_2}{\varrho_1} = \xi_{z_x} \cdot \frac{w_z^2}{2\mu} . \qquad (21)$$

In this, P_1 is the pressure before the valve; P_2 - pressure after the valve; w_z - velocity of the medium in the same bore to which the valve resistance number ξ_{z_x} refers; ξ_z - resistance of the valve. All authors named in the refer-

Card 2/3

86727

The Basic Methods of Sizing Control Valves

ences agree that all four methods may be employed for gases. The author, by his own analysis in another not yet published work, came to the conclusion that the expansion number ε and the flow coefficient ψ most generally are a function of the aperture m, of the pressure ratio p_2/p_1, and the mean polytropic coefficient of the isotropic change $m_{s\acute{s}r}$. As the most reliable ones, the author regards the contraction method and the flow coefficient method. There are 3 figures and 16 references: 2 Polish, 3 Soviet, 3 German and 8 English.

Card 3/3

L 41765-66   EWP(j)   RM

ACC NR: AP6031706   (N)   SOURCE CODE: PO/0099/66/040/003/0499/0501

AUTHOR: Kulicki, Zdzislaw; Kiersznicki, Tadeusz; Mazonski, Tadeusz   26

ORG: Department of Organic Chemical Technology, Silesian Institute of Technology, Gliwice (Katedra Technologii Chemicznej Organicznej Politechniki Slaskiej)

TITLE: Alkylation of chlorobenzene by isopropyl bromide in the presence of anhydrous aluminium chloride catalyst

SOURCE: Roczniki chemii-annales societatis chimicae polonorum, v. 40, no. 3, 1966, 499-501

TOPIC TAGS: alkylation, chlorobenzene, isomer

ABSTRACT: The alkylation of chlorobenzene with isopropyl bromide in the presence of anhydrous aluminum chloride has been studied. The content of ortho, meta, and para isomers in the mono-isopropylchlorobenzene fraction has been determined. The yield of mono-isopropylchlorobenzene was 68.6 percent, the orientation obtained was approximately 10.0 percent ortho, 65.4 percent meta, and 24.4 percent para. The analysis of the product was performed by vapor-liquid chromatopgraphy. Orig. art. has: 1 table. [Based on authors' Eng. abst.] [JPRS: 36,002]

SUB CODE: 07 / SUBM DATE: 13May65 / ORIG REF: 001 / SOV REF: 003

Card 1/1

KARMINSKI, Wladyslaw; KULICKI, Zdzislaw; MAZONSKI, Tadeusz

Possibility of separating pseudocumene from solvent petroleum by fractional distillation and selective sulfonation and desulfonation. Koks 9 no.4:122-126 Jl-Ag '64.

1. Department of Technology of Organic Chemistry of the Silesian Technical University, Gliwice.

KARMINSKI, Wladyslaw; KULICKI, Zdzislaw

Ullmann synthesis of 2,2-bipyridine from 2-bromopyridine in
the presence of various solvents. Chemia stosow A 9 no.1:
129-133 '65.

1. Department of Technology of Organic Chemistry of Silesian
Technical University, Gliwice. Submitted March 27, 1964.

MAZONSKI, Tadousz; KULICKI, Zdzislaw; PINDUR, Brygida

Reaction of alkylating chlorobenzene with isopropyl alcohol in the presence of various catalysts. Pt.1. Rocz chemii 37 no.5: 569-573 '63.

1. Department of Organic Technology, Silesian Institute of Technology, Gliwice.

KULICSOV, V.A., dr;

Examination of the concentrating function of the gallbladder
by intravenous cholecystangiography. Magy. radiol. 14 no.5:
269-272 S '62.

1. A Szovjet Hadsereg Egeszsegugyi szolgalata.
        (CHOLECYSTOGRAPHY)   (CHOLANGIOGRAPHY)   (CHOLECYSTITIS)
        (PANCREATITIS)   (CHOLELITHIASIS)   (PAPILLOMA)

KULICZ, Adam; SAFARZYNSKA-RYBKA, Irena

A case of false diverticulosis (Barsonyi's syndrome. Polski tygod.
lek.15 no.10:361-363 7 Mr '60.

1. Z Zakladu Radiologii Szpitala Zespolonego no.2 w Bytomiu; kierownik:
dr.med. Bohdan Romanowski i z II Kliniki Chorob Wewnetrznych Sl. A.M.
w Bytomiu; kierownik: prof. dr.med. Kornel Gibinski.
     (ESOPHAGUS dis.)

KULICZ, Adam

A case of adenomyomatosis of the gall bladder. Pol. przegl.
radiol. 29 no.3:301-305 My-Je '65.

1. Szpital Zespolony w Bytomiu — Zaklad Radiologii (Kierownik:
dr. med. B. Romanowski).

KULIDA, M., svarshchitsa-montazhnitsa (Chelyabinsk)

Largest in Europe. Rabotnitsa 36 no.8:2 Ag '58.   (MIRA 11:9)
(Chelyabinsk--Blast furnaces)

KULIDA, V.

From practices in the creation of teaching aids. Avt.transp. 39
no.4:47 Ap '61.   (MIRA 14:5)

1. Direktor Krasnodarskogo uchebnogo kombinata.
            (Highway transport workers—Education and training)
                        (Visual aids)

KULIDZHANOV, I., inzhener; BURMISTROV, A., inzhenor.

Distilling high sulfur crude in a pressure vacuum installation.
Neftianik 2 no.7:28-29 Jl '57.   (MLRA 10:8)

1.Kuybyshevskiy neftepererabatyvayushchiy zavod.
                    (Distillation) (Vacuum apparatus)

KULIFAJ, Lukas, inz.

Experiences in organization of construction assembly in building
the Vychodoslovenske zeleziarne. Pozemni stavby 13 no.4:151-153
'65.

1. Hutne stavby National Enterprise, Kosice.

AUTHORS: Murach, N.N. and Kulifeyev, V.K.   SOV/149-58-6-7/19

TITLE: Some Problems of the Metallurgical Thermic Processes
            (Nekotoryye voprosy metallotermii)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya
            Metallurgiya, 1958, Nr 6, pp 64 - 71 (USSR)

ABSTRACT: When a metal is produced by the thermit process, another
            metal can be used as a reducing agent only if the formation
            of its oxide results in a large decrease of the free
            energy $F = -A = -Q - T\Delta S$, where A - the maximum work
            of the reaction, Q - the heat of oxide formation,
            T - absolute temperature, ΔS - change of the entropy.
            It has been already established that in order to start the
            reaction in the alumino-thermit process the heat of the
            formation of the oxide (ΔH kcal/g-mole of O_2) and the
            specific heat of formation (Q kcal/kg of the oxide)
            should satisfy the conditions described by Eq (1), which
            in the case of the metals of the titanium sub-group
            becomes Eq (2). By comparing the value of Q calculated
            from Eq (1) or (2) with its actual value, the probability
Card1/9   of a given reaction taking place can be assessed. When

SOV/149-58-6-7/19
Some Problems of the Metallurgical Thermic Processes

Q is too small, a heat-producing substance is introduced; when Q is too large, cooling is necessary by the addition of a neutral substance. The degree of the completeness of the reaction is usually assessed from the metal yield. This method is not reliable and the object of the present investigation was to explore the possibilities of using for this purpose the value of Q determined experimentally for several reaction by calorimetric measurements. A calorimeter of the type normally used for the determination of the calorific value of fuels and adapted to suit the present requirements, was used for the experimental work. Silica crucibles, lined with aluminium or calcium oxide were used and the reaction was started by means of an electrically heated nichrome wire. The charge, in the form of briquettes 2-5 g in weight was placed in the bomb which was then purged and filled with argon. The heat of reaction, Q, was calculated from the formula (Eq 3) where H – heat equivalent of the calorimeter, Δt – the temperature rise, Q' – the quantity of heat generated by the igniting device and equal 0.239 UIτ . In the preliminary expriments, the

Card2/9

SOV/149-58-6-7/19

Some Problems of the Metallurgical Thermic Processes

effect of briquetting and of the weight of the charge on the yield of the metal were investigated. The results are reproduced in Table 1 under the following headings: Weight of the charge, g; Theoretical yield of the metal, g; Actual yield when no briquetting was used (a) g and (b) %; Actual yield from briquetted charge (a) g and (b) %. The beneficial effect of briquetting on the metal yield is attributed to the fact that sputtering is minimised since less air is entrapped in briquetted charge and to the improved heat balance of the smelting process. Increasing the weight of the charge also usually results in an increase of the metal yield, since when a large charge is used, the products of the reaction retain the heat and so remain in the liquid state for a longer period, so that coalescence of the metal drops in the slag is more likely to occur. Consequently, it can be postulated that, all other conditions being equal, the metal yield depends on the purely physical conditions of the liquid metal - liquid slag system, which means that the completeness of the reaction cannot be accurately assessed

Card3/9

SOV/149-58-6-7/19

Some Problems of the Metallurgical Thermic Processes

from the metal yield since the smaller the charge used
the larger is the quantity of metal lost in the slag.
The heat of reaction determined by calorimetric measure-
ments is a much more reliable criterion as was shown by
the results of a series of experiments whose average
results are reproduced in Table 2 showing that the value
of the heat of reaction (bottom line, cal) is hardly
affected by the variation of the weight of the charge
(top line, g). In the next stage of the investigation
the following reactions were studied:
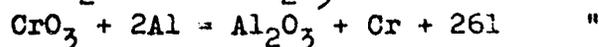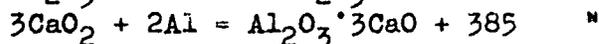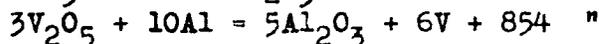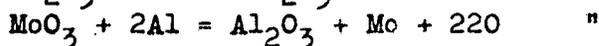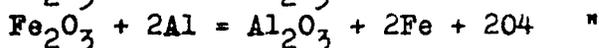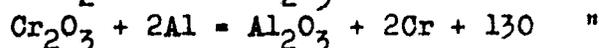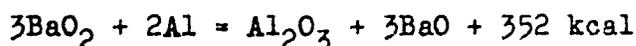
$$3BaO_2 + 2Al = Al_2O_3 + 3BaO + 352 \text{ kcal}$$
$$Cr_2O_3 + 2Al = Al_2O_3 + 2Cr + 130 \quad "$$
$$Fe_2O_3 + 2Al = Al_2O_3 + 2Fe + 204 \quad "$$
$$MoO_3 + 2Al = Al_2O_3 + Mo + 220 \quad "$$
$$3V_2O_5 + 10Al = 5Al_2O_3 + 6V + 854 \quad "$$
$$3CaO_2 + 2Al = Al_2O_3 \cdot 3CaO + 385 \quad "$$
$$CrO_3 + 2Al = Al_2O_3 + Cr + 261 \quad "$$

Card4/9

Some Problems of the Metallurgical Thermit Processes $^{SOV/149-58-6-7/19}$

$$Al_2(SO_4)_3 + 8Al = 4Al_2O_3 + Al_2S_3 + 900 \quad kcal$$
$$KClO_3 + 2Al = Al_2O_3 + KCl + 413 \qquad "$$
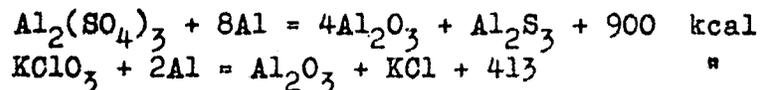
In each case the effect of excess aluminium on the completeness of the reaction (as indicated by the heat of reaction) was determined. The results reproduced in Figure 2 (Q kcal/kg plotted against excess Al in % of the theoretically required quantity) show that the larger the excess of the reducing agent, the more complete is the reaction. The object of the next series of experiments was to determine the extent to which the accuracy of assessing the completeness of the reaction in thermit processes from the metal yield is affected by the fact that the produced metal may contain a quantity of the reducing agent when the latter is used in excess of the theoretically required quantity. The results of these experiments are given in Table 4 under the following headings:
1) Charge (a) Fe_2O_3, g;   (b) quantity of aluminium required theoretically, g;   (c) excess of Al, g;

Card5/9

SOV/149-58-6-7/19

Some Problems of the Metallurgical Thermit Processes

(d) excess of Al, %;
2) Theoretical Fe yield, g;
3) Actual yield, g; (a) including alloyed Al;
(b) excluding alloyed Al;
4) Completeness of the reaction, %, determined from
(a) the total metal yield; (b) the metal yield excluding
alloyed Al and (c) heat of reaction.
It can be seen that in cases when small excess of Al had
been used, the degree of completeness of the reaction
determined from the quantity of the obtained metal from
which the excess of Al used had been deducted was in good
agreement with the assessment based on the calorimetrically
determined heat of reaction. However, when large excess
of Al was used, the calorimetric data gave values of the
completeness of the reaction higher than that obtained from
the metal yield. This effect is attributed to the formation
of an intermetallic compound resulting in the evolution of
an additional quantity of heat. In the next few paragraphs
of the paper, factors affecting the completeness of the
thermit processes in which so-called "warming-up" additions
Card6/9 are used, are discussed. The effectiveness of these

Some Problems of the Metallurgical Thermic Processes

additions is stated to depend on the extent to which they react with the reducing agent and on their effect on the properties of the produced slag. In this connection, the author discusses the production of uranium by reduction of its oxide by aluminium according to the reaction:

$$3 \ U_3O_8 \ + \ 16 \ Al \ = \ 9U \ + \ 8 \ Al_2O_3 \ + \ 665 \ kcal \ .$$

Since only 274 kcal/kg U_3O_8 is evolved, while the necessary heat of reaction calculated from Eq (1) is 890 kcal/kg, additional quantity of heat has to be supplied for which purpose additions of CaO_2 or $KClO_3$ are used. The results of many experiments showed that optimum yield was obtained when the calculated heat of reaction, Q_p, was considerably lower than the specific heat of reaction obtained from Eq (1). The results of two experiments carried out under the same conditions but with different "warming-up" additions, are given in Table 5 under the following headings: 1) Nr of the experiment; 2) Weight of the constituents of the charge, g; 3) Excess of Al (a) g, (b) %; 4) The degree

Card 7/9

Some Problems of the Metallurgical Thermic Processes

of completeness of the reaction of the "warming-up"
addition, %; 5) Alloy yield, g; 6) Heat of the reaction
kcal/kg: (a) calculated; (b) with the correction for the
completeness of the reaction of the "warming-up" addition;
(c) with the correction for the heat of formation of the
intermetallic compounds (UAl_2). Finally, in view of the
lack of agreement as to the correct values of the heat
of formation ΔH of V_2O_5, the heat of reaction between
V_2O_5 and Al was carefully measured and found to be
1 562 kcal/kg V_2O_5. The value of ΔH calculated from
this figure was 384 kcal/kg which agreed well with the
value of $\Delta H = 382$ kcal/kg determined by Kubaschewski
(Ref 5).
There are 2 figures, 5 tables and 11 references, 8 of
which are Soviet, 1 English and 2 German.

Card8/9

SOV/149-58-6-7/19

Some Problems of the Metallurgical Thermic Processes

ASSOCIATION: Moskovskiy institut tsvetnykh metallov i zolota.
               Kafedra radioaktivnykh metallov (Moscow Institute
               of Non-ferrous Metals and Gold. Chair of Radio-
               active Metals)

SUBMITTED: June 23, 1958

Card 9/9

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        (ADRENAL GLANDS, neoplasms
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KULIGIN, I.

F.m. microwave receiver. Radio no.3:30-32 M_r '60. (MIRA 13:6)
(Radio, Shortwave--Receivers and reception)

L 45259-66   EWT(m)/EWP(j)/T   RM

ACC NR: AP6023236   (A)   SOURCE CODE: UR/0342/66/000/004/0031/0035

20
B

AUTHOR: Kuligin, L. A.

ORG: Ivanovo Scientific Research Institute of the Cotton Industry (Ivanovskiy nauchno-issledovatel' skiy institut khlopchatobumazhnoy promyshlennosti)

TITLE: Use of radiation in the study of the principles governing the movement of yarns in a drawing machine

SOURCE: Tekstil' naya promyshlennost' , no. 4, 1966, 31-35

TOPIC TAGS: cotton yarn, single apron drawing machine/Geiger counter, VSP converter

ABSTRACT: Previous experiments have shown that during drawing yarns moving at speeds not exceeding 0.25 cm/sec pass directly from v_1 (feeding rate) to v_2 (rate of drafting). The influence of high-speed drafting on the movement of yarns has not yet been studied, but it has been shown that if speeds are higher than 0.25 cm/sec, uncontrolled yarns can reach intermediate speeds when passing from v_1 to v_2. To study the movements of yarns, the author selected cotton yarns of

Card 1/2

L 45259-66

ACC NR: AP6023236

various lengths moving in a single-apron high drafter operating at various capacities and speeds. The yarns were treated with the radioactive isotope strontium-90(Sr^{90}) with a specific activity of 5 mcu/ml; they were immersed for 8 min in a strontium solution and then dried at room temperature. Their radioactivity was determined by a Geiger counter and a VSP-type converter. Only yarns with an activity of at least 20,000 impulses per min were studied. The author describes the experiment in detail and concludes that the uncontrolled yarns studied have an intermediate speed when passing from v_1 to v_2. Studies of the average velocity of uncontrolled yarns are also described, and the author states that it is possible to determine the average velocity v(cm/sec) of uncontrolled yarns 15, 20, 30 and 35 mm long as is shown in a table appearing in original article. Orig. art. has: 4 figures, 6 formulas, and 3 tables. [GC]

SUB CODE: 11,07,18/ SUBM DATE: none/

Card 2/2

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Application of radiation for the analysis of the contact between
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SARKIS'YANTS, T. Kh.; ZUBAREV, A.V.; KULIGIN, N.A.; LOSHKAREV, K.I.

Single-cone bit. Mash. i neft. obor. no.3:3-6 '63 (MIRA 17:7)

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(MIRA 11:7)

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